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An Inaugural Essay
on
Indigestion
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## — Indigestion —

Numerous and diversified, as are the diseases to which mankind are liable, we find none that in its continuance produces more deplorable consequences, than that known, under the name of indigestion — This too frequently arises from its not having been sufficiently attended to, in its incipient state, for its progress is so gradual, as scarcely to excite the alarm of the patient, until it has taken firm hold of the system — If we consider the organ in which it is situated, and its importance in the animal machine, it will seem, that any, even the slightest disorder of function in it, will if protracted, affect the whole economy — In making a few remarks on the above disease, I merely repeat the observations of others, whose practical experience on the subject, would appear to render them proper guides — Digestion may be said to consist, of that series of actions, which take place either simultaneously, or successively, in the alimentary canal, the food undergoes numerous changes, from its first being taken into the mouth, and masticated,

until its arrival at the large intestine, from which it is transported and expelled. The changes that aliments undergo in the stomach, had long perplexed the ancients, and the whole force of their ingenuity was turned to the explanation of this single point, their excited imaginations gave rise, to numerous fanciful hypothesis, each exceeding the other in extravagance. one sect maintained, that the food underwent putrefaction in the stomach. Hippocrates attributed digestion to coction, effected by an elevated temperature, and Galen endowed the stomach with numerous powers, in order to explain the mystery of the process. In more recent times, Reaumur was the first, who endeavoured to show in a satisfactory manner, that the changes which the food underwent, must be accomplished by some fluid agent, which acted in the manner of a solvent. His experiments on the subject, had a great influence in altering the physiological doctrine of digestion. The existence of a fluid termed gastric, was generally admitted, and many investigations were instituted, for the

purpose of ascertaining its qualities - it is remarkable for its antiputrescent, coagulating, and solvent power - Mr. Hunter found it capable of corroding the coats of the stomach when they were deprived of life. Dr Fordyce found that the most putrid meat, after remaining a short time in the stomach of a dog, became perfectly sweet. Dr Stevens procured an individual who wore strainer silver balls, these were perforated and contained different kinds of food, he perceived that they were all acted on, but in various degrees according to their previous preparation, thus raw animal matters, were not so much affected, as when roasted or boiled, the vegetable grains had altered, becoming only moistened, and broken. In the natural process of digestion, the food after entering the stomach, is converted into chyme, this passing into the duodenum, is mixed with the bile and pancreatic fluids, by which it is converted into chyle, the nutritious part of this, is absorbed, the excrementitious following the course of the intestines, is thrown out of the system - Digestion, cannot be considered as a

chemical process, but as a vital operation, this is evident from all its phenomena. The stomach may be viewed, as the great regulator of the whole system, which when paid due regard to, and kept in its proper state, is the organ of nutrition, but when violated by offending materials, it throws all into utter confusion. There is no organ of the body which is not directly or indirectly affected by the operations of the stomach. Its sympathies are so numerous, and its influence so extensive, that at one period it was regarded as the seat of the soul. Its sympathies with mental impressions, are remarkable, sickness ensuing, on the sight of unpleasant objects, and grief, often occasions total loss of appetite. With regard to its influence, over other functions, an instance of its effects, may be seen in hunger, muscular strength being diminished, the action of the heart is opposed, and respiration rendered imperfect. An immediate change ensues, when food is taken in, this cannot be from the nourishment extracted, the effect being too sudden, but merely, by the impression, made

on the stomach - In short, there might with be imagined an independent and directing principle, to reside in the digestive organs. The diseases of these organs, are a class of complaints, that affect our moral, as well as our physical nature, the body and mind, suffering nearly in an equal degree. Diseases of the alimentary canal, are more frequently to be observed, in the higher walks of life, where from a luxurious mode of living, and want of active exercise, the powers of the constitution become enervated - Indigestion, had been defined to be a primary disease, in which one or more of the several processes by which food is converted into blood, are imperfectly or improperly performed, in consequence, either of functional aberration, or organic lesion. When the qualities of agents concerned in healthy digestion, do not act on the food, in the usual manner, the contents of the stomach may remain unchanged - but ultimately is decomposed, the sooner or later, depending on the nature of the substances taken. The alimentary mass under these

circumstances, produces very different effects, on the organ in which it is contained, and on the system generally, and which does not take place, when the stomach is occupied by healthy chyme. In considering the causes which give rise to disorder of the digestive function, it is necessary to advert to healthy digestion - Food when received into the stomach, owes its conversion into chyme, to the combined action, of the chemical power of the gastric juice, and the mechanical movements of the stomach. The secretion of the gastric fluid, seems to be wholly dependent, on nervous influence, this conclusion is drawn, from the numerous experiments, which have been instituted on animals, with regard to the division of the eighth pair of nerves - Now, the disorders of the alimentary canal, may be induced by whatever tends to produce a derangement, of the secreting powers + so that the food does not undergo, the necessary changes, or by whatever debilitates the stomach + so that the food is not brought in contact with its coats, and consequently, cannot be properly prepared. As in affections of the stomach, certain parts

of the system become implicated in its derangements, so it in turn, is made to feel the effects of their disorders. as debility of the Skin, which may have been produced by indigestion, reacts on the Stomach, and is one of the means of keeping up the disease, from which it derived its origin. The principal cause of indigestion, may be referred to errors in diet, sometimes, from excess in quantity, at others from defect in quality, but of the two the former is the most frequent. The System requires a certain quantity of food, for its healthy nourishment, and in consequence of this, the digestive fluids will act on but a limited mass, this varies in different individuals, also in the same person, at different times, all beyond this, undergoes common chemical changes, or is the means of exciting morbid sensations. The quality and quantity of food, is little suspected, of the injury resulting from it, because individuals daily transgress, without suffering, but at last, the same food, which had so long been taken, with impunity, begins to create the

most uncomfortable sensations, and these being unheard, disorder of function, is the consequence. The physiological action of food, and drink, is shown more on other organs and parts, than on the stomach itself, when the quantity taken has been moderate, and the quality simple, a general sense of refreshment, and vigour, is experienced over the whole body, at the same time no distinct sensation is perceived in the stomach, so far all goes on well. On the contrary, if improper food has been taken, or too much, even of what is simple, the stomach in endeavouring to free itself from the load, makes us sensible of a feeling of distension, attended at times, with a degree of depression of spirits, and irritability of temper, giving the first indication of indigestion, so that whenever a distinct sensation is called forth in the stomach, or the food is followed by excitement of the system, and an inaptitude for mental or corporeal exertions, the rules of health have been transgressed, and the foundation of disease about being laid. The use of narcotic and

other substances for a length of time, will be productive of indigestion, as strong coffee, or Tea, tobacco, opium, The too frequent repetition of emetics, debilitates the muscular fibre, large quantities of acid fluids, is said to be oftentimes the cause, of bringing on an attack of the disease - but one of the most frequent is stated by Wilson Philip, to be morbid distension, of the stomach, which by overstretching the muscular coat, prevents it from acting on its contents - the muscular powers, are excited too suddenly, and too forcibly, the distention not being gradual. The most common cause of morbid distention, is eating too fast, for the appetite only subsiding, as the food combines with, and neutralizes the gastric fluid, already in the stomach, time, is not given, for this combination to take place, so that more food is received, than the quantity of gastric fluid, which the stomach is capable of furnishing, during the digestive process, will be able to effect, a due alteration in. Over distension is also caused, by the stimulus of highly seasoned food, that which pleases the palate, and in-

-duces one to continue eating, after the calls of nature have been satisfied - the degree of distension, depends much on the character of the food, some kinds irritate more than others, and that hardest of assimilation, irritates most. Distension, acts not only on the muscular fibre but on the nerves of the stomach, thereby causing ~~pain~~ pain, restlessness, and oppression. There are some causes, that act immediately, on the nervous system, and secondarily, on the muscular, as violent passions of the mind, grief, anxiety, intense mental application, strong mental impressions, often at once, destroy the appetite. It is related of Van Helmont, that going to dine with a friend, he dislocated his ancle, when, his appetite, immediately left him, the bone being replaced, it, again returned, the loss of appetite, could not have been the effect, of bodily impression, for the pain continued, even after the operation. Indigestion, may be produced, by the diseases of other organs, as of the Spleen, liver, Pancreas, &c so extensive, are the sympathies of the stomach, that whatever, tends to disturb the function, of

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any important organ, may be considered among the causes of indigestion. The period of life from puberty to forty, presents the most numerous cases, of disease of the digestive organs. The symptoms of indigestion - these have been divided into several stages, as marking its progressive advances - the symptoms first observed, are such, as are given rise to, from the irritation occasioned by undigested aliment, - after a full meal, there is oppression at the pit of the stomach, or a sense of fit, flatulence, sour eructations, sometimes nausea, and vomiting - these may continue for a certain length of time, without in any other way, sensibly affecting, the functions of the system, and the powers of the stomach, may be reinstated, by avoiding the offending substances, and proper attention to diet, but the above symptoms, (continuing) to recur, other parts of the alimentary canal, begin to suffer - the secretions, are not as healthy as formerly - The taste is disagreeable, mouth clammy, and tongue loaded, especially in the morning, with a yellowish, or dirty white fur, a sense of thirst,

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the appetite, is generaley more or less impaired, and variable - and there is a distressing feeling of debility, this is a characteristic feature of the disease. Johnson remarks, that it is more a sense of debility, than real, the least exertion, causes an inability for muscular action, and depresses the spirits of the patient, yet this feeling wears off, when the food passes from the stomach, it is, therefore a sympathetic debility, from nervous irritation in the alimentary canal. The mind participates, in the languid state of the body, and is not equal to its usual efforts - the sleep is disturbed by unpleasant dreams, and occasionaley by fits of nightmare. The colour of the discharges from the bowels, becomes changed, assuming various hues, from the altered state of the bile. The urine, flows sometimes in large quantities, cloudy, and often deposits a sediment, its increased quantity, seems to depend, on a failure in the action of the skin. None of the senses are more frequently sympathetically affected, than hearing, and sight, noise in the ears, and partial deafness, when the function of

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digestion is disordered; may often lead to a suspicion of the latter, when the ordinary symptoms of indigestion, do not present themselves. The organs of vision, likewise suffer, there is an indistinctness of sight; weakness of the eyes, when exposed to a strong light. From the intimate sympathy between the stomach and brain, any derangement of the digestive organs, usually communicates its influence to the head. The headache arising from indigestion, is divided by Dr Warren into two kinds, the first has reference to a fault in the stomach, the second to a defective action in the upper bowels. In the advanced stage of the more severe cases, there is often a viscid frothy secretion, from the fauces, and the mouth, clear than usual. the patient is always endeavouring to throw up this matter after his meals. The skin becomes dry, shriveled, and almost scaly, and the patient is sometimes harassed by a dry irritating cough. The second stage of indigestion, Dr Philips remarks, is characterized, by a tenderness of the epigastric region, when pressure is made, and

if the pulse be examined in a peculiar manner, it will be found to be hard, and frequent, there being considerable, there is great languor and inability to exercise - In the second stage, the sympathetic affections, begin to assume a more decided character, being at first merely nervous, and ceasing, as soon as the cause by which it has been produced, is removed, but now, it becomes more permanent, and independent of the original disease, and acquires, an appropriate mode of treatment - It is stated by Dr Philip, that long continued nervous irritation, at length terminates in inflammation, and organic derangement, of the part affected, he adduces cases in support of the position - as Hepatitis causing pain in the shoulder, ~~at last become fixed~~. but no disease of it, the pain being merely sympathetic, if it runs on, the pain in the shoulder at last becomes fixed. when any sympathetic disease becomes firmly established, the original symptoms are mitigated, and sometimes wholly suspended, but if the new disease be only symptomatic, instead of relieving

it often aggravates them. The third and last stage of In-
-digestion, is that in which organic disease has occurred.
Those organs more immediately connected with the digestive
functions, will more readily undergo a change of structure,
on account of the protracted irritation, they must have
sustained, then those in succession connected by the ties of
sympathy. When indigestion, has continued to harass the
stomach for some time, its bilious coat becomes tumid, lur-
-gid with blood, and sometimes ulcerated. Mr. Abernethy says
these appearances are most manifest in the large intes-
-tines, and accounts for it in this way, if the digestive be
incomplete, the food is liable to undergo chemical changes,
and the product of this will be most stimulating, to the
large intestines, and on them, its injurious effects, will be
most likely to be evinced. It appears from the causes enu-
-merated, as giving origin to indigestion, that our food is
not one of the least fertile sources, therefore in considering
the treatment to be pursued in the diseases of the digestive
organs, it will be useful in the first place, to take into

consideration the subject of diet, the various kinds, and their different degrees of digestibility. The necessity of regulations in diet, has been opposed from the fact, that man is omnivorous, and that there is scarcely any animal, or vegetable, that has not been used by some nation, without inconvenience - one race, subsisting on roots - another, on raw flesh, and others again, on a mixed diet - but daily experience, and observation, teaches that the food which may be suited to one constitution, may not agree with that of another - It will seem from the chemical and mechanical processes to which the food is subjected, before its conversion into chyme, that its digestibility, is as much dependent on mechanical as its chemical composition - The healthy stomach, digests most readily and effectually, solid food of a certain density, if it exceeds this, it will require a greater length of time, and more active powers to complete its chymification - approaching too nearly to the consistence of gelatine, the stomach will be impeded in its operations, that degree of consistence, that is suited to digestion, can only be known by attentive observation - Tough, adscent, and oily

articles of food, is the most difficult of digestion, the one opposed to this, is best for dyspeptics, composed pretty much of animal food, and stale bread, of animal substances, the flesh of old, is said to be more easy of digestion, than that of young animals, which contains a greater quantity of mucilage. Mutton appears to possess that degree of consistence most suited to the stomach. Beef is not so easy of digestion, but equally nutritious. The meat most mixed with fat, is oppressive. pork, goose, ducks, should be avoided, also veal and lamb. The lean part of venison, is one of the best articles of diet, of birds, those which are designated as white poultry are best. The flesh of wild animals is better than that of tame. Soups, also oils, gelatins, and other gelatinous matters, although containing the elements of nutriment, are not digested without considerable difficulty, by their loading the powers of the stomach, & their tendency preventing the absorption of the fluid parts. Those articles that are imperfectly prepared by the gastric juice, will be difficult of digestion, hence new bread, is particularly objectionable. Schmucker, mentions the case of two soldiers, who had

eaten immoderately of it - they complained of uneasiness at the stomach, vomiting succeeded, the abdomen became hard, & tumid the pulse sunk, & death ensued - of all animal substances, milk, combines least stimulus, with considerable nourishment, it is easily assimilated, & therefore affords a quick supply of nutriment, to the system, & does not excite, that degree of vascular action, which is produced by other animal matters - With regard to drinks, water seems to be evidently the fluid, intended for the proper dilution of our food, & to assist in its digestion, by affording the necessary degree of moisture, too much fluid, by diluting the gastric juice, would impair this operation - The quantity of liquid taken at once into the stomach, is a matter of material consequence - The best criterion for the quantity to be used, is the sensation of the patient himself, never taking more at once, than is necessary to allay his thirst - There is a difference of opinion, with respect to the proper temperature of drinks for dyspeptics, it is often necessary to raise them to the standard of the body, for the stomach not having vital en-

ergy to resist, if it felt the sudden impression of cold, might fall into a state of collapse, but, fluids drank very warm, from their stimulus, although they afford present relief, are usually followed by subsequent debility. The habit of taking small quantities, of food at a time, & that frequently, is said to be decidedly injurious, the natural process of digestion is disturbed, & the healthy action of the stomach, as evinced by the return of moderate appetite, is entirely prevented. Three meals in the twenty four hours, is recommended, in the interval of which, nothing should be taken - There are some cases of great debility, where the stomach is not able to bear a sufficient degree of food, to observe the regular interval, between meals, as due nourishment might not be received, but in every case, regularity should be attempted, as soon as possible, as to the proportion of food that it may be proper for an invalid to take - Dr Philip says, that the dyspeptic should attend to the first feeling of satiety - there is a moment, when the relish given by the appetite ceases, a single mouthful, taken after this,

oppressed a weak stomach, if he eats slowly, and carefully attends to this feeling, the stomach will never be overloaded. of exercise, this when moderate, is of essential service to the dyspeptic invalid, but certain cautions are to be observed, viz= that exercise for an hour or two, after meals, should be refrained from, as it creates a feeling of uneasiness - Exercise of the mind, is also as necessary, as that of the body, for the former is usually languid, when the latter is in any way disordered, in exercising, either body or mind, fatigue should never be induced - of the medicinal treatment of indigestion - The first object to be attained, when called to a patient labouring under the symptoms of a loaded & oppressed stomach, is to remove the offending materials, this must be done by an emetic, which may be followed by some mild aperient. The alimentary canal must be cleared of all foul congestions, & their future accumulations prevented, first by a strict adherence to a diet, most likely to endure the digestion of the food, and secondly by the careful exhibition of laxatives, which may carry off the superfluous parts - all saline & drastic articles,

should be avoided, but Rhubarb, on account of its tonic qualities has been much used - when acid eructations occur, the best correctors, will be found to be the alkalies, magnesia, lime water, & prepared chalk, the stomach must be excited to a better secretion by the use of gentle stimulants, the distilled waters, mixed with some aromatic tincture, & by correctives, to alter the morbid properties of its contents - when spasm, prevents the action of the bowels, the combination of opium with an aperient, will promote its operation - vomiting, is to be allayed by the saline draught, this not proving effectual, a pill of opium & camphor may be given, & blistering the region of the stomach - when the disease is confined to the stomach & bowels, those means must be resorted to, that tend to restore them to their natural tone, the most powerful of these, are tonics - Bitters, possess a power of invigorating the digestive organs, those in common use, are the chamomile, gentian, cascarilla, columbo, peruvian bark - astringents, are useful being more or less, tonic in their effects, one of the best of these, is the carbonate of iron, in combination with bitters,

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and aromatics, Sulphuric acid, is deserviable, in those cases where sweating is easily induced, by exercise, indicating relaxation of the skin - all the mineral acids, possess tonic powers - The white oxide of Bismuth, has been much extolled. The bowels must be kept in a soluble state, by the use of mild aperients - an infusion of senna, graduated in strength according to the circumstances of each particular case, & combined with small doses, of some neutral salt, is a good preparation - Purgatives, that act with violence, are calculated to increase the morbid irritability, by which the disease is nourished, & are usually followed, by an aggravation of the symptoms. Mr Abercrombie, says, that ore may be purged, without having the bowels cleared, of the fecal matter contained in them, from this, a principle has been laid down in the administration of purgatives, that the excitement is to be repeated, till the requisite action is induced, yet no single excitement, bring such, as may prove an irritant to the organs. The external application of heat, to the region of the stomach, will often allay

gastric irritation, that depends on the presence of indigestible matter. Friction, applied by means of the flesh brush to the abdominal region, is said to be very serviceable. When a change, begins to occur, in the alvine discharges, known by their assuming an unnatural colour, there is in addition to the original disease, some derangement in the function of the liver, to correct the morbid state of this organ, we use activity, in conjunction with those, that give strength to the alimentary canal, the medicine chiefly resorted to, for this purpose, is mercury, it should be given if possible, so as not to produce any general effects, on the system - it is used, in two ways either in the form of calomel, or blue pill, the former, is more irritating, than the latter, the blue pill is therefore best, when it is necessary to use a preparation, intended to remain any length of time, in the bowels, three or four grains, may be taken every other night. When the symptoms continue obstinate, covering the parts with a warm mercurial plaster, tends to remove the

disease. The dandelion, is recommended as an aperient to mercury, but in large doses it proves oppressive to the stomach. When symptoms of an inflammatory nature superveene, indicated by the tenderness of the epigastric region, & hardness of pulse, the stimulating measures are to be used with caution, & the antiphlogistic become necessary. The application of leeches, to the tender part of the epigastrium, after which, a blister to the part, from which the leeches were taken, affords considerable relief. To lessen the inflammatory action, nitrat of potass, largely diluted with water, has been highly recommended. A free use of aperients, is now required. Change of air, is one of the most efficacious methods, of curing dyspeptic complaints, the advantages which attend it, have been ascribed, to the exhilarating impressions produced on the mind, & the change of habits which usually take place, on such occasions. Finally, more benefit, may be expected to arise, in dyspeptic complaints, from a judicious regulation, of the diet, & habits, of the

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patient, than from the best application, of mere drugs -
The chief reliance should be placed on the former, while
the latter, should be considered as useful, tho' commonly,
feeble auxiliaries.